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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/648,179	08/26/2003	Yixin Diao	YOR920030088US1	4426
7590 05/09/2006 Ryan, Mason & Lewis, LLP 90 Forest Avenue Locust Valley, NY 11560			EXAMINER OCHOA, JUAN CARLOS	
			ART UNIT 2123	PAPER NUMBER

DATE MAILED: 05/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/648,179	DIAO ET AL.	
	Examiner	Art Unit	
	Juan C. Ochoa	2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 August 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>6/18/04 & 7/16/04</u> . | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

1. Claims 1–33 are presented for examination.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because:

3. As to Figure 3, it does not include the following reference sign(s) mentioned in the description: 335.

4. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

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5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1–4, 9–13, 18–22, 26–28, and 33 are rejected under 35 U.S.C. 102(b) as being anticipated by Al-Hilali et al., (Al-Hilali hereinafter), U.S. Patent 6,086,618 A.

7. As to claim 1, Al-Hilali discloses a method of constructing a model representative of a resource for use in managing a service associated with the resource (see Fig. 4 and col. 9, lines 31–36), comprising the steps of: associating a resource abstract model with the resource (see Fig. 4, #102 and “transactions” in col. 10, lines 11–14); obtaining a set of resource metrics in accordance with the resource abstract model associated with the resource (see Fig. 4, #104); and constructing a model representative of the resource based on at least a portion of the set of resource metrics obtained in accordance with the resource abstract model (see Fig. 4, #106, 108, and 110).

8. As to claim 2, Al-Hilali discloses a method wherein the constructed model comprises a quantitative model (see “develop cost equations that can be used to create a model of total resource usage” in col. 9, lines 31–45).

9. As to claim 3, Al-Hilali discloses a method wherein the resource abstract model is constructed by at least one individual with expertise associated with the resource (see col. 10, lines 11–16).

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10. Claim 3 has been given a broad reasonable interpretation by the Examiner. The Examiner notes that the step disclosed in (col. 10, lines 11–16) is functionally equivalent to the results produced by the step expressly claimed in Applicant's dependent claim 3. Therefore, the "product" that is produced by performing the step disclosed in dependent claim 3 is the functional equivalent of the "product" that is produced in (col. 10, lines 11–16). Although the "step" by which the end result is different, the final result for the "step" is identical.

11. As to claim 4, Al-Hilali discloses a method further comprising the step of obtaining one or more service level metrics for use in constructing the model representative of the resource (see col. 10, lines 16–20).

12. As to claim 9, Al-Hilali discloses a method further comprising the step of checking the accuracy of the constructed model (see col. 14, lines 55–63).

13. As to claim 10, Al-Hilali discloses a method wherein the accuracy checking step comprises use of change point detection (see col. 14, lines 55–63).

14. As to claim 11, Al-Hilali discloses an apparatus for constructing a model representative of a resource for use in managing a service associated with the resource (see Fig. 1 and col. 5, lines 56–59), comprising: a memory (see Fig. 1, #22); and at least one processor coupled to the memory (see Fig. 1, #21) and operative to: (i) obtaining a set of resource metrics in accordance with a resource abstract model associated with the resource (see Fig. 4, #104); and (ii) constructing a model representative of the resource based on at least a portion of the set of resource metrics

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obtained in accordance with the resource abstract model (see Fig. 4, #106, 108, and 110).

15. As to claims 12, 13, 18, and 19, these claims recite an apparatus for performing the method of claims 2, 4, 9, and 10. Al-Hilali discloses an apparatus (see Fig. 1 and col. 5, lines 56–59) for performing a method that anticipates claims 2, 4, 9, and 10. Therefore, claims 12, 13, 18, and 19 are rejected for the same reasons given above.

16. As to claim 20, Al-Hilali discloses an article of manufacture for constructing a model representative of a resource for use in managing a service associated with the resource, comprising a machine readable medium containing one or more programs which when executed implement (see Fig. 1, #29 and 31) the steps of: obtaining a set of resource metrics in accordance with a resource abstract model associated with the resource (see Fig. 4, #104); and constructing a model representative of the resource based on at least a portion of the set of resource metrics obtained in accordance with the resource abstract model (see Fig. 4, #106, 108, and 110).

17. As to claims 21, 22, and 26, these claims recite an apparatus for performing the method of claims 2, 4, and 9. Al-Hilali discloses a machine-readable medium (see Fig. 1, #29 and 31) for performing a method that anticipates claims 2, 4, and 9. Therefore, claims 21, 22, and 26 are rejected for the same reasons given above.

18. As to claim 27, Al-Hilali discloses a method of providing resource management services, comprising the steps of: deploying one or more resource abstract models in association with one or more resources, the one or more resource abstract models

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being useable to obtain one or more sets of resource metrics (see “distributed” in col. 18, lines 66–67 and col. 19, lines 1–4); based on at least a portion of the one or more sets of resource metrics obtained in accordance with the one or more resource abstract models, constructing one or more models representative of the one or more resources (see “equations can be implemented in a model” col. 18, lines 66–67); and using the one or more constructed models to manage the one or more resources (see col. 19, lines 4–7).

19. As to claim 28, Al-Hilali discloses a method further comprising the step of obtaining one or more service level metrics for use in constructing the one or more models representative of the one or more resources (see col. 10, lines 16–20).

20. As to claim 33, Al-Hilali discloses a method further comprising the step of checking the accuracy of the one or more constructed models (see col. 14, lines 55–63).

Claim Rejections - 35 USC § 103

21. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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22. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

23. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

24. Claims 5, 6, 8, 14, 15, 17, 23–25, 29, 30, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Al-Hilali as applied to claims 1, 4, 11, 13, 20, 22, 27, and 28 above, taken in view of Hayball et al., (Hayball hereinafter), U.S. Patent 6,959,335.

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25. As to claims 5 and 29, while Al-Hilali teaches almost all of the instant invention as applied to claims 4 and 28 above, Al-Hilali fails to disclose a method wherein the one or more service level metrics are obtainable from one or more service level agreements.

26. Hayball discloses a method wherein the one or more service level metrics are obtainable from one or more service level agreements. (See col. 4, lines 34–38).

27. Al-Hilali and Hayball are analogous art because they are both related to estimating resource usage requirements.

28. Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by applicant to utilize the relationship of Hayball in the method of Al-Hilali because Hayball utilizes a model of the communications network to provide the provisioning information (see col. 4, lines 24–27), and as a result, Hayball reports the following advantages: provisioning a path over a connectionless communications network, such as the internet, which has a guaranteed bandwidth and quality of service, enabling a network operator to make efficient use of a communications network and to provide differentiated services which promote efficient use of that network, and means to manage the communications network easily whilst providing several virtual leased lines and differentiated services which are otherwise complex to manage (see col. 4, lines 21–34).

29. As to claims 6 and 30, Hayball discloses a method further comprising the step of obtaining a topology of one or more resources used to deliver one or more services associated with the one or more service level agreements, including the resource for

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which the model is being constructed, for use in constructing the model representative of the resource (see col. 4, lines 17–20). As per the topology definition in (application description page 7, 4th paragraph), Examiner interprets “amount of available bandwidth over said path” as minimal set of resources that may be used in service delivery and “provisioning information to provision said path” as the flows between them.

30. As to claims 8 and 32, Hayball discloses a method wherein the constructed model is useable for (i) reporting one or more service level metrics (see “policing” in col. 7, lines 34–37) and (iv) generating one or more notifications related to automated service level enforcement (see col. 24, lines 45–53).

31. As to claims 14, 15, and 17, these claims recite an apparatus for performing the method of claims 5, 6, and 8. Al-Hilali discloses an apparatus (see Fig. 1 and col. 5, lines 56–59) for performing a method that teaches claims 5, 6, and 8. Therefore, claims 14, 15, and 17 are rejected for the same reasons given above.

32. As to claims 23–25, these claims recite an apparatus for performing the method of claims 5, 6, and 8. Al-Hilali discloses a machine-readable medium (see Fig. 1, #29 and 31) for performing a method that teaches claims 5, 6, and 8. Therefore, claims 23–25 are rejected for the same reasons given above.

33. Claims 7, 16, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Al-Hilali as applied to claims 1, 11, 27 above, taken in view of Jannarone, Robert J., (Jannarone hereinafter), U.S. Patent 6,216,119.

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34. As to claims 7 and 31, while Al-Hilali teaches almost all of the instant invention as applied to claims 1 and 27 above, Hilali fails to disclose a method wherein the resource is an element of an autonomic computing environment.

35. Jannarone discloses a method wherein the resource is an element of an autonomic computing environment (see Fig. 1, item No. 14 and col. 16, lines 28–30).

36. Hilali and Jannarone are analogous art because they are both related to estimating resource usage requirements.

37. Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by applicant to utilize the multi-kernel neural network computing architecture of Jannarone in the method of Hilali because Jannarone utilizes a multi-kernel array which learns and predicts simultaneously in "real time" (see col. 3, lines 43–45), and as a result, Jannarone reports an improvement over the drawbacks of conventional neural network systems and a significant advancement in neural network techniques (see col. 3, lines 45–48 and col. 7, lines 51–52).

38. As to claim 16 this claim recites an apparatus for performing the method of claim 7. Al-Hilali discloses an apparatus (see Fig. 1 and col. 5, lines 56–59) for performing a method that teaches claim 7. Therefore, claim 16 is rejected for the same reasons given above.

Conclusion

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39. Examiner would like to point out that any reference to specific figures, columns and lines should not be considered limiting in any way, the entire reference is considered to provide disclosure relating to the claimed invention.

40. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Juan C. Ochoa whose telephone number is (571) 272-2625. The examiner can normally be reached on 7:30AM - 4:00 PM.

41. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Rodriguez can be reached on (571) 272-3753. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

42. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*** *je* 4/24/06

Paul L. Rodriguez 4/27/06
Primary Examiner
Art Unit 2125